## REMARKS/ARGUMENTS

We wish to thank the Examiner for the attention given to the present application.

Claims 1-4 have been amended to clearly define these claims as method claims.

Claims 1-3, 5 and 7 have also been amended to provide proper antecedents for several terms.

As well, claims 9-12 have been cancelled and new claims 13-16 have been added to more clearly set forth Applicant's invention in the form of a computer program product. It should be noted that care has been taken to avoid the inclusion of any new subject matter.

Applicant will now turn to the Examiner's objections based on the prior art as set out in the Official Action.

**Sharon**

The Examiner has rejected claims 1, 2, 5, 6, 9 and 10 as being anticipated by Sharon et al. U.S. 6,205,122, hereinafter referred to as Sharon.

In Sharon's "automatic network topology analysis" process, Sharon describes a method and system for automatically detecting and analyzing the physical topology of a network where software agents are distributed throughout a network to be managed within computers accessible to the central system server. Various techniques are then initiated in an attempt to discover links and other associations local to each agent within a network under management in order to develop an understanding of the makeup of the network.

Before discussing the prior art further, the significance of certain features of Applicant's claims will be more readily appreciated when it is fully realized that Applicant's network topology distributed discovery method and system includes several data collection (DC) node computers distributed throughout a network under management, each in general proximity to the network devices to be discovered.

These DC node computers put in place a series of discovery engine instances that will poll pre-existing agents on targeted network segments in order to elicit responses to queries directed to detailed device, state and topology information for any device that responds to such queries, including any device that is managed by an simple network management protocol (SNMP) agent. The discovery engine includes a base program and a scalable family of vendor-specific discovery subroutines. The base program discovers detailed information for any device that supports the management information base (MIB)-II standard. The discovery of detailed information from a vendor's private MIB is accomplished through the aforementioned vendor-specific discovery subroutines. All collected polling data is stored in a distributed network topology database.

A performance monitor (PM) server computer can subsequently import elements of the resulting distributed network topology database provided for by the DC nodes for use in support of network management operations such as printing reports. By dividing the workload of network topology discovery across several computing nodes and not collecting all topology data centrally as with Sharon's system, system overhead reductions and advances in overall scalability are achieved.

Furthermore, Sharon's proprietary agents cannot be installed on non-computer network components such as routers and hubs, severely handicapping system effectiveness. In order to compensate for this handicap, Sharon attempts to provide additional accuracy by utilizing other available sources of physical topology information, such as the bridging tables of network switches in order to better construct the physical topology of a network.

Applicant's invention by contrast leverages existing SNMP and other pre-positioned agents and collects discovery information in a distributed database in proximity to targeted network elements for later access by a remote reporting server only as needed.

Sharon's system behaves in the undesirable manner of centralized long distance gathering of topology information described in the background art of Applicant's specification. Sharon describes their system on Column 6 lines 20-28 as follows; "*System 10 features a central management engine (CME) 12, which is a package of software modules operated by a computer in the network. CME 12 receives information from a plurality of agents 14, which*

*are software modules operated by other computers in the network. These other computers communicate with the computer operating CME 12, such that agents 14 are able to send information to, and receive instructions from, CME 12*". Thus, Sharon's queries are performed over long distances between the agents 14 and the CME 16, which is by definition a central and remote collector of network topology data. This results in the consumption of valuable bandwidth, increased processing times, potential data loss and unnecessary access around a customer's firewalls. Further, Sharon's system is incapable of providing the level of discovery information that Applicant's invention provides through the direct polling of all network elements.

Applicant's invention by contrast uses data collection nodes distributed in proximity to the network elements to be managed in order to build a distributed localized discovery database that is occasionally accessed remotely by a performance monitor server computer to provide reports to an administrator of the network.

Therefore, the Examiner's rejection of claims 1, 2, 5, 6, 9 and 10 as being anticipated by Sharon is respectfully traversed since Sharon is incapable of delivering the benefits of Applicant's invention such as low overhead, improved time-out performance, distributed local polling and storage of data, and reduced discovery times.

**Compliment**

Turning now to the Examiner's rejection of claims 3, 7 and 11 as being unpatentable over Sharon in view of Compliment et al. U.S. 5,706,440, hereinafter referred to as Compliment, and common general knowledge in the art.

In the Column 2 excerpt pointed to by the Examiner, Compliment is simply describing the SNMP standard's inclusion of non-standard, vendor-specific MIB extensions. By contrast, Applicant's invention is directed to discovering non-standard MIB devices in order to query their vendor-specific MIB's using a vendor-specific algorithm in a new and inventive manner in accordance with Applicant's overall method and system.

Sharon and Compliment are incapable of delivering the benefits of Applicant's overall invention such as low overhead, improved time-out performance, distributed local polling and

storage of data, and reduced discovery times. Therefore, the Examiner's rejection of claims 3, 7 and 11 as being unpatentable over Sharon in view of Compliment is respectfully traversed.

**Sharon-2**

Turning now to the Examiner's rejection of claims 4, 8 and 12 as being unpatentable over Sharon in view of Sharon et al. U.S. 6,137,782, hereinafter referred to as Sharon-2, and common general knowledge in the art.

Sharon-2 merely describes further leveraging Sharon's original system as described above to analyze traffic topology by reading data packets flowing between agents. These two references together still behave in the undesirable manner of centralized long distance gathering of topology information described in the background art of Applicant's specification.

Sharon and Sharon-2 are incapable of delivering the benefits of Applicant's invention such as low overhead, improved time-out performance, distributed local polling and storage of data, and reduced discovery times. Therefore, the Examiner's rejection of claims 4, 8 and 12 as being unpatentable over Sharon in view of Sharon-2 is respectfully traversed

In conclusion, Applicant can find no indication in the cited references of distributed localized discovery of network elements and storage of polling data in a distributed database provided for in Applicant's invention. The methods of the cited references are incapable of performing the functions or delivering the advantages provided for by Applicant's method and system. The restrictions and requirements imposed by these issues and the problems inherent with prior art attempts at solutions to these issues have given rise to the various features of Applicant's invention that distinguish it over the prior art.

Based upon the above remarks, the rejection of claims 1-12 as being anticipated by and/or obvious in view of the cited references is respectfully traversed. Applicant can find no indication of distributed localized discovery of network elements and storage of polling data in a distributed database in the cited references, as none is described or implied. The methods described in the cited references are incapable of performing the functions or

delivering the advantages of distributed localized discovery of network elements and storage of polling data in a distributed database. Furthermore, Applicant sees no relevance between the cited references and Applicant's invention in substance, applicability or design, as the features and implementations of each are entirely different.

It is therefore respectfully submitted that, in view of the above remarks and amendments, and having dealt with all of the matters raised by the Examiner, the present invention patentably distinguishes over the prior art. Applicant respectfully requests entry of these amendments and early reconsideration and allowance of this application based on the reasons set out above.

It is noted that the August 13, 2004 Office action states that some of the certified copies of the priority documents have been received. However, it should state that all of the certified copies of the priority documents have been received, since applicant mailed in a certified copy of the sole priority document on July 16, 2001. Appropriate correction is requested.

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Respectfully Submitted,

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